C. TRANSPORTATION, CIRCULATION AND PARKING

This section describes the potential transportation impacts associated with the North Main Street Development (NMSD) Project. This section was developed by Fehr and Peers Associates, Inc., in consultation with the City of Milpitas. The project site location and site plan are presented in Figures IV.C-1 and IV.C-2, respectively. Detailed technical information, including the traffic count data and calculation sheets, is provided in Appendix B.

1. Existing Setting

A description of the existing conditions of the NMSD Project area and the vicinity related to transportation, circulation and parking is provided below.

a. Regulatory Background. The evaluation of potential impacts to the circulation system is based on City of Milpitas General Plan, City transportation impact analysis (TIA) guidelines, and the guidelines published by the Santa Clara Valley Transportation Authority (VTA). The City maintains and has jurisdiction over all roadways within the planning area with several exceptions. The California Department of Transportation (Caltrans) has jurisdiction over State-designated routes including Interstate 880 (I-880) and 680 (I-680) and State Route (SR) 237. The Santa Clara County Roads and Airports Departments has jurisdiction over local county roads; however, there are no county roads within the study area.

The VTA is an independent special district responsible for congestion management, countywide transportation planning, and bus and light rail operations in Santa Clara County. As the Congestion Management Agency (CMA) for the County, the VTA determines with input from the member agencies, State, and Federal funding priorities for transportation improvements. The CMA monitors Congestion Management Program (CMP) facilities that include the freeways, key intersections along State routes, the County expressways, and other arterial roads that serve regional traffic.

Operating standards for facilities vary depending on the governing jurisdiction and CMP designation. Level of Service (LOS) D is the minimum acceptable operating level for all signalized local intersections not included in the CMP network. LOS E is the minimum acceptable operating level for all signalized CMP intersections. A detailed description of level of service is included under the Analysis Methodology section below.

Based on City policy and VTA guidelines, a transportation impact analysis (TIA) is required for all projects that are expected to generate more than 100 peak hour trips. This analysis is used to identify the specific transportation issues for a given development project and the corresponding specific improvements need to be made to address deficiencies. Since this document identifies major improvement required to mitigate potential project impacts, subsequent TIAs will be used to identify minor operational improvements (e.g., longer lane transitions, additional turn lanes, or new raised medians) that may be required to provide improved traffic operations. The City of Milpitas requires new development to mitigate for their fair share of improvements through the payment of traffic mitigation fees or through the implementation of specific roadway improvements.

b. Existing Roadway Network. In the vicinity of the NMSD Project area, the existing transportation system is almost exclusively represented by roadways. Automobiles and bus service are the primary travel mode for most trips in this area, while bicycle and pedestrian travel is limited. This

Figure IV.C-1: Site Location

8x11

Figure IV.C-2: Site Plan

8x11

section describes the existing roadway network, which is illustrated on Figure IV.C-1. SR 237/ Calaveras Boulevard, I-880, I-680, Montague Expressway, and Great Mall Parkway provide regional access to the project area. Local access is provided by Milpitas Boulevard, Main Street, Abel Street, Serra Way, and Carlo Street. Detailed descriptions of the key roadway facilities are presented below.

- **SR 237** includes two distinct facilities: a six-lane east-west freeway west of I-880 that extends to US 101 in the City of Mountain View; and a 6- to 8-arterial street with traffic signals from I-880 to I-680 with a grade-separation at the Union Pacific Railroad. The arterial section is locally designated as Calaveras Boulevard. Calaveras Boulevard serves as a major commute route with heavy directional travel during the peak hours (westbound in the morning and eastbound in the evening).
- **I-680** is a north-south freeway located east of the project site extending north through the City of Fremont and south through the City of San Jose. This freeway serves extremely heavy commute volumes from East Bay communities a well as commuters from Livermore, Tracy and other Central Valley communities. The directional commute travel is predominantly southbound into Santa Clara Valley in the morning and northbound in the evening. I-680 has seven lanes north of Calaveras Boulevard (SR 237) and eight lanes south of Calaveras Boulevard (SR 237). Access to the site is provided via interchanges at Calaveras Boulevard (SR 237) and Jacklin Road.
- **I-880** is a north-south freeway located west of the project site extending north through the City of Fremont and south through the City of San Jose. In the vicinity of the project site, this freeway includes eight lanes north of State Route (SR) 237/Calaveras Boulevard and transitions to six lanes south of SR 237/Calaveras Boulevard. Access to the project site is provided via an interchange at Calaveras Boulevard (SR 237).
- **Milpitas Boulevard** is a four-lane arterial extending from Montague Expressway to north of Dixon Landing Road into the City of Fremont. At the City limit, which is also the Alameda-Santa Clara County line, this street is designated as Warm Springs Boulevard.
- **Main Street** is a two- to four-lane, north-south, minor arterial roadway extending northward from Montague Expressway to Railroad Avenue (north of Calaveras Boulevard). At Railroad Avenue, Main Street continues to the north as Marilynn Drive. South of Montague Expressway, Main Street becomes Oakland Road. Main Street includes two lanes in the vicinity of the project site, and direct access to SR 237 is provided via a ramp from Carlo Street.
- **Abel Street** is a four-lane, north-south, minor arterial roadway extending between Milpitas Boulevard and Main Street (south of Great Mall Parkway). East of Milpitas Boulevard, Abel Street is designated as Jacklin Road. The section of Abel Street between Corning and Curtis Avenues includes four travel lanes plus a two-way left-turn lane.
- **Weller Lane** is a two-lane street connecting Abel Street to Main Street north of Calaveras Boulevard. The east leg of this intersection is Winsor Avenue, which extends east and then south to Carlo Street around the existing Senior Center and future library site.
- **Serra Way** is a four-lane, east-west collector roadway extending between Calaveras Boulevard (SR 237) and Main Street. Signalized intersections are located at Abel Street, and Main Street.
- **Carlo Street** is a one- to two-lane, east-west local roadway between Abel Street and the Union Pacific railroad tracks. The west end of Carlo Street is one way eastbound between Abel Street and the on-ramp to eastbound Calaveras Boulevard (SR 237). A turn around is provided west of the on-ramp.

c. Transit Service. Transit service in the vicinity of the NMSD Project site is described below.

(1) Existing Transit Service. The Santa Clara Valley Transportation Authority (VTA) operates bus and light rail transit (LRT) service in Santa Clara County. The existing transit facilities in the vicinity of both project sites are shown on Figure IV.C-3.

Currently, Midtown includes an important component of bus transportation in the City with the transit hub located at Main Street and Weller Lane at the northern end of the Midtown area, adjacent to the existing Senior Center location. This facility provides a transfer point between the Santa Clara County VTA system and the Alameda County (AC) Transit systems.

Routes 66, 104, 140, 520, and 217 (217 is an AC Transit bus route) all provide service to the Weller & Main Transit Center located adjacent to the proposed library site. These individual bus routes are described in greater detail below:

- *Route 66* provides fixed-route service between Santa Teresa Hospital in San Jose and Milpitas. Weekday service is provided between 4:45 a.m. and midnight on 15- to 60-minute headways. Weekend service is provided between 5:30 a.m. and 11:30 p.m. on 30- to 60-minute headways.
- *Route 104* is an express bus route providing access from East San Jose, through Milpitas, and on to Palo Alto. The route operates in the westbound direction during the morning commute periods only. During the evening commute periods, the route operates in the eastbound direction only. There is no weekend service. During the AM commute, three routes operate between 5:30 and 8:00 a.m. on 40-minute headways. During the PM commute, three routes operate between 3:15 and 5:40 on 35- to 45-minute headways.
- *Route 140* is an express bus route beginning at the Fremont BART station, extending south through Milpitas, and at the Sunnyvale CalTrain station. Route 140 operates between 6:00 a.m. and 9:20 a.m. in the southbound direction only on 30- to 45-minute headways. During the evening commute, the route operates in the northbound direction only, between 3:45 p.m. and 7:30 p.m., on 30- to 45-minute headways.
- *Route 520* is an express bus route between the Fremont BART station and the Moffett Field area near Mountain View, with a stop at the Weller & Main Transit Center in Milpitas. During the morning commute period, the route operates in the southbound direction only, between 5:00 a.m. and 8:00 a.m. on approximately 60-minute headways. During the evening commute period, Route 520 operates in the northbound direction only, between 2:50 p.m. and 6:00 p.m., on 60- to 75-minute headways.
- *Route 217* is an AC Transit bus route providing access between the Fremont Bart Station and Milpitas. The route operates weekdays from 5:45 a.m. to 10:20 p.m. on approximately 30-minute headways. On weekends, Route 217 operates from 7:00 a.m. to 8:20 p.m. on 30-minute headways.

The Tasman East LRT line currently provides service from the Alum Rock station in East San Jose through Milpitas to N. First Street in North San Jose. The Tasman East line connects to the Guadalupe and Tasman West lines with service to South San Jose and Mountain View, respectively.

(2) Transit Center Relocation. With the opening of the new Great Mall/Main Transit Center in July 2004, a substantial portion of the bus operations at the existing Main Street/Weller

Lane transit center was relocated to the new transit center. The purpose of this relocation is to serve the new multi-modal station at the Great Mall, which will also include a park-and-ride lot. Thus, the number of daily bus operations at the northern end of the Midtown area was substantially reduced; however, bus service is still provided throughout the Midtown.

d. Pedestrian and Bicycle Facilities. Existing pedestrian and bicycle facilities that serve the NMSD Project area are described below.

(1) Sidewalks. Sidewalks are provided on both sides of Main Street south of Weller Lane. Pedestrian signals and crosswalks are provided at the signalized Main Street/Weller Lane intersection. Wide sidewalks of approximately 8 feet are located on both sides of Weller Lane, west of Main Street. North of Weller Lane, there is a sidewalk on the west side of Main Street only as the sidewalk on the east side of Main Street terminates just north of the intersection. Sidewalks are provided on both sides of Winsor Avenue between Weller Lane and Carlo Street.

Field observations showed that much of the sidewalk on the west side of Winsor Avenue in this area is obscured by parked vehicles associated with the nearby automobile repair garage. Existing sidewalks near the project site were observed to be in good condition.

(2) Bicycle Facilities. Bicycle facilities comprise bike paths (Class I), bike lanes (Class II), and bike routes (Class III). Bike paths are paved trails that are separated from roadways. Bike lanes are lanes on roadways designated for bicycle use by striping, pavement legends, and signs. Bike routes are roadways designated for bicycle use by signs only. Bicycle facilities in the study area are presented on Figure IV.C-4.

An existing Class I bike path is provided on the north side of Abel Street, between Milpitas Boulevard and Redwood Avenue. A Class I path is under construction on Berryessa Creek from Hillview Drive to Abel Street, including a pedestrian bridge over the creek between Hillview Drive and Milpitas Boulevard, and is scheduled for completion in early 2005. Class II bike lanes are on Milpitas Boulevard through the entire study area. Bicycle lanes are on Jacklin Road from Park Victoria Drive east of I-680 to Milpitas Boulevard. Bicycle paths are located on Main Street from the south into the study area, and terminate at Weller Lane. Main Street, north of Weller Lane, and Marylinn Drive are designated Class III bike routes. Calaveras Boulevard is a designated bike route through the study area, as is Abel Street south of Redwood Avenue.

Field observations showed that existing bike lanes near the project site were in good condition. No bike route signs are posted along Calaveras Boulevard.

e. Parking. On-street parking is prohibited on both sides of Main Street in the project area. Parking is permitted on the south side of Weller Lane between Abel Street and Main Street. Parking, except for commercial vehicles, is also permitted on both sides of Winsor Avenue between Weller Lane and Carlo Street.

A 38-stall parking lot is located at the existing historic grammar school building on the southeast corner of the intersection of Main Street and Weller Lane. The lot was observed to be in good condition.

Figure IV.C-3: Transit Routes

Color

Print back-to-back with IV.C-4

Figure IV.C-4: Existing Bicycle Facilities

8x11 B&W

f. Analysis Methodology. The operations of the intersections and freeway segments were evaluated using Level of Service (LOS) calculations. Level of Service is a qualitative description of a roadway's operation, ranging from LOS A, or free-flow conditions, to LOS F, or over-saturated conditions. Different methodologies were used for the near-term and cumulative analysis based on city and regional policies. These different methodologies are described below.

(1) Near-Term Analyses. The following sections describe the analysis methodology used for the near-term analysis contained in this section.

Signalized Intersections. The signalized intersection level of service methodology approved by the VTA and adopted by the City of Milpitas bases an intersection's operation on average control vehicular delay for all vehicles entering the intersection, calculated using the method described in Chapter 16 of the 2000 Highway Capacity Manual (HCM) with adjusted saturation flow rates to reflect conditions in Santa Clara County. The average delay for signalized intersections is calculated using the TRAFFIX analysis software and is correlated to a level of service designation as shown in Table IV.C-1. The City of Milpitas has established a minimum acceptable operating LOS D for non-CMP intersections. The minimum acceptable level for CMP-monitored intersections is LOS E.

Unsignalized Intersections. The unsignalized study intersections were evaluated using the methodology contained in Chapter 17 of the 2000 HCM. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (See Table IV.C-2). Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. At two-way or side street-controlled intersections, LOS is calculated for each controlled movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. For all-way stop controlled locations, LOS is computed for the intersection as a whole. The City of Milpitas does not maintain an established minimum acceptable LOS for unsignalized intersections, but does require evaluation of key intersections to determine if installation of traffic signals is warranted.

Freeway Segments. Freeway level of service was analyzed according to the CMP technical guidelines, which is based on the methodology described in the 2000 HCM. Freeway LOS is calculated based on the density of traffic flow or the number of passenger cars per mile per lane. Density is calculated based on the peak hour traffic volume, the number of travel lanes, and the average travel speed for a given mainline segment. The level of service criteria are shown in Table IV.C-3. The CMP requires that mixed-flow and auxiliary lanes be analyzed separately from HOV lanes. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments six lanes or wider in both directions and a capacity of 2,200 vphpl be used for segments four lanes wide in both directions. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

(2) Cumulative Analyses. The City of Milpitas uses a roadway segment analysis approach to evaluate potential impacts of General Plan amendments under far-term (2015) conditions. Although performance of travel demand forecasting models has improved over the last decade, the City has determined that forecasting detailed intersection turning movement peak hour volumes 15 years or more in the future based on presumed roadway network and land use assumptions is not appropriate for long-range transportation planning studies. Accordingly, the City has determined that a link-

Table IV.C-1: Signalized Intersection Level of Service Definitions

Level of Service	Description of Operations	Average Control Delay (sec / veh)
A	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.	≤ 10
B	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 to 20
C	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 20 to 35
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.	> 35 to 55
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Table IV.C-2: Unsignalized Intersection Level of Service Definitions

Level of Service	Description of Operations	Average Control Delay (sec / veh)
A	No delay for stop-controlled approaches.	0 – 10
B	Operations with minor delays.	> 10 – 15
C	Operations with moderate delays.	> 15 – 25
D	Operations with some delays.	>25 – 35
E	Operations with high delays, and long queues.	> 35 – 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Table IV.C-3: Density Based Freeway Level of Service Criteria

Level of Service	Density (passenger cars/mile/lane)
A	Density ≤ 11.0
B	11.0 < density ≤ 18.0
C	18.0 < density ≤ 26.0
D	26.0 < density ≤ 46.0
E	46.0 < density ≤ 58.0
F	58.0 < density

Source: Transportation Research Board, Highway Capacity Manual (2000), Washington, D.C.

volume roadway segment analysis is a superior method to evaluate the impacts of General Plan amendments.

As described in the Midtown Milpitas Specific Plan EIR, traffic operations of roadway segments are determined based on the volume-to-capacity ratio, which is correlated to a level of service. The capacity of each roadway type depends on a number of factors including intersection spacing, lane widths, signal timing and coordination, and side friction (on-street parking, driveway spacing), and was originally developed in consultation with City Staff. Table IV.C-4 presents the lane capacity assumptions and LOS thresholds for each facility type.

Table IV.C-4: City of Milpitas Density Based Level of Service Criteria for Future Freeway and Roadway Segment Analysis

Facility Type	Lane Capacity Vehicles per Hour	A	B	C	D	E	F
Freeway	2,000	1,200	1,600	1,600	1,800	2,000	> 2,000
Expressway	1,100	660	770	880	990	1,100	> 1,100
Major	1,000	600	700	800	900	1,000	> 1,000
Arterial	900	540	630	720	810	900	> 900

Source: City of Milpitas Planning and Neighborhood Preservation Division, 2000.

g. Existing Traffic Conditions. Existing traffic conditions including volumes, lane configurations and level of service for key intersections and freeway segments are described below. It should be noted that a midday scenario was provided for informational purposes. Midday project conditions were analyzed under Existing and Baseline Plus Project Conditions only.

(1) Existing Traffic Volumes and Lane Configurations. The key intersections were analyzed under weekday morning (AM), midday (MD), and evening (PM) peak-hour traffic conditions. Peak conditions usually occur during the AM, MD, and PM periods between 7:00 and 9:00 a.m., 11:00 a.m. to 1:00 p.m., and 4:00 p.m. and 6:00 p.m., respectively. Intersection operations were evaluated for the one hour during each of these periods with the highest measured traffic volumes as presented on Figure IV.C-5A and IV.C-5B found in Appendix B. The existing intersection lane configurations and traffic control devices are presented on Figure IV.C-6A and IV.C-6B in Appendix B.

New existing peak-hour traffic counts were conducted in August and September 2004, and supplemented with counts from previous studies provided by City Staff and from the Milpitas Library Relocation Transportation Impact Analysis. Copies of new traffic counts are included in Appendix B.

In Year 2000, seven of the 10 study intersections were counted during the PM peak hour for use in the Midtown Milpitas Specific Plan EIR. The 2003 PM peak hour counts were compared to the 2000 counts. The results indicate that most of the study intersections had higher PM peak hour volumes in 2000 than 2003. To be conservative, Year 2000 counts were still used in this study to represent Existing Conditions during the PM peak hour on some of the intersections.

The existing lane configurations and the peak-hour turning movement volumes were used to calculate the levels of service for each of the 17 study intersections during each peak hour. The results of the existing LOS analysis are presented in Table IV.C-5, and the calculation worksheets are included in Appendix B.

(2) Existing Intersection Levels of Service. The results of the LOS calculations indicate that only the unsignalized intersection of South Main Street/Carlo Street/Calaveras Boulevard (SR 237) On-Ramp currently operates at unacceptable levels (during the PM peak hour).

(3) Signal Warrant Analysis. A peak hour signal warrant analysis, as described in Chapter 9 of the Caltrans *Traffic Manual,* was conducted under Existing Conditions for the Main Street/Carlo Street and Main Street/SR 237 WB off-ramp intersections. The results of the peak hour signal warrant analysis indicate that neither intersection satisfies the peak-hour warrant for traffic signal installation. The volumes and figures used to conduct this analysis are presented in Appendix B.

(4) Freeway Segments. According to the latest data available from the VTA, as shown in Table IV.C-6, the following freeway segments are operating at unacceptable levels (LOS F) under Existing Conditions:[1]

SR 237

1. Eastbound – Zanker Rd to McCarthy Blvd (PM peak Hour)
2. Westbound – McCarthy Blvd to Zanker Rd (AM and PM peak hours)

I-680

1. Northbound – Montague Expressway to Yosemite Dr. (PM peak hour)
2. Northbound – Yosemite Dr. to SR 237 (PM peak hour)
3. Northbound – SR 237 to Jacklin Rd (PM peak hour)
4. Southbound - Capitol Ave to Hostetter Rd (PM peak hour)
5. Southbound – Montague Expressway to Capitol Ave (PM peak hour)
6. Southbound – Yosemite Dr to Montague Expressway (PM peak hour)

I-880

1. Northbound – Brokaw Rd to Montague Expressway (PM peak hour)
2. Northbound – Montague Expressway to Great Mall Pkwy (PM peak hour)
3. Northbound – Great Mall Pkwy to SR 237 (PM peak hour
4. Southbound – Montague Expressway to Brokaw Rd (PM peak hour)

The VTA is in the process of collecting 2004 CMP monitoring data on freeways and at intersections, but this information was not available when this document was prepared in September 2004.

[1] The existing volumes and levels of service shown in Table 6 for freeway segments represent baseline conditions according to VTA and City of Milpitas transportation impact analysis standards. The addition of traffic to freeway segments from approved and pending developments in Milpitas and surrounding jurisdictions, as well as increased through traffic, is included in the analysis of cumulative conditions.

Table IV.C-5: Existing Intersection Levels of Service

Intersection	Peak Hour	Count Date[a]	Average Intersection Delay[b]	LOS[c]
Abel Street / Marylinn Drive	AM	2004	18.3	B-
	MD	2003	17.0	B
	PM	2000	52.4	D-
Abel Street / Weller Lane	AM	2004	9.6	A
	MD	2003	8.4	A
	PM	2003	11.7	B+
Main Street / Weller Lane	AM	2004	22.7	C+
	MD	2003	21.5	C+
	PM	2003	24.3	C
Abel Street / Calaveras Boulevard (SR 237)*	AM	2003	48.2	D
	MD	2003	39.3	D
	PM	2000	50.2	D
Main Street / Calaveras Boulevard (SR 237) Off-Ramp (U)	AM	2004	11.3	B
	MD	2003	10.0	B
	PM	2003	12.0	B
South Main Street / Carlo Street / Calaveras Boulevard (SR 237) On-Ramp (U)	AM	2004	10.4	B
	MD	2003	10.6	B
	PM	2000	**38.0**	**E**
Abel Street / Serra Way	AM	2004	26.4	C
	MD	2003	20.6	C+
	PM	2000	35.9	D+
Main Street / Serra Way	AM	2004	11.6	B+
	MD	2003	9.4	A
	PM	2000	17.2	B
Milpitas Boulevard / Jacklin Road (Abel Street)	AM	2004	48.6	D
	MD	2003	21.6	C+
	PM	2000	48.1	D
Milpitas Boulevard / Calaveras Boulevard (SR 237)*	AM	2003	50.9	D
	MD	2003	41.9	D
	PM	2000	62.6	E
Abel Street / Redwood Avenue	AM	2004	15.3	B
	MD	2004	9.5	A
	PM	2004	7.5	A
Calaveras Boulevard / Serra Way	AM	2004	17.9	B
	MD	2004	30.0	C
	PM	2004	23.0	C+
Calaveras Boulevard / Abbott Avenue	AM	2004	36.0	D+
	MD	2004	32.0	C
	PM	1999	32.8	C
Calaveras Boulevard / Town Center Drive	AM	2003	5.9	A
	MD	2004	20.7	C+
	PM	2003	8.7	A

Table IV.C-5 *continued*

Intersection	Peak Hour	Count Date[a]	Average Intersection Delay[b]	LOS[c]
Calaveras Boulevard / Hillview Drive	AM	2003	28.9	C
	MD	2004	33.1	C-
	PM	2003	42.6	D
Milpitas Boulevard / Town Center Drive	AM	2003	23.0	C+
	MD	2004	27.0	C
	PM	2003	26.1	C
Milpitas Boulevard / Escuela Parkway	AM	2004	20.3	C+
	MD	2004	18.3	B-
	PM	2004	15.8	B

[a] See text description of count dates, and which counts were used.
[b] Average control delay per vehicle for signalized and unsignalized intersections using methodologies described in the *2000 Highway Capacity Manual*, with adjusted saturation flow rates to reflect Santa Clara County conditions. LOS Calculations conducted using the TRAFFIX analysis software package.
[c] LOS = Level of Service
* Denotes CMP monitored intersection.

Notes: AM = AM Peak Hour; MD = Midday Peak Hour; PM = PM Peak Hour
(U) = Unsignalized study intersection.
Unacceptable operations are shown in **bold** type.

Source: Fehr and Peers Associates, Inc., 2004.

Field Observations. Field observations of the key study intersections in the project site vicinity were conducted to verify the calculated operations. In general, the observations indicated that most of the study intersections are operating at or near the calculated levels of service. The exceptions are described below.

During the AM peak hour, westbound vehicles on Calaveras Boulevard were observed periodically queuing through the signalized intersections of Milpitas Boulevard, Town Center Drive, and Hillview Drive because of the lane reduction on the railroad overpass. Vehicles were able to proceed through the intersections during most cycles. The LOS calculations do not accurately reflect these field conditions. During the PM peak hour, eastbound vehicles on Calaveras Boulevard were observed queuing through the signalized

Table IV.C-6: Existing Freeway Segment Analysis

Freeway	Segment	Direction	LOS[a] AM	LOS[a] PM
SR 237	McCarthy to Zanker	EB	C	**F**
		WB	**F**	**F**
I-680	Hostetter to Capitol	NB	D	C
		SB	C	**F**
I-680	Capitol to Montague	NB	D	D
		SB	C	**F**
I-680	Montague to Yosemite	NB	D	**F**
		SB	C	**F**
I-680	Yosemite to SR 237	NB	D	**F**
		SB	D	E
I-680	SR 237 to Jacklin	NB	D	**F**
		SB	D	D
I-880	Brokaw to Montague	NB	D	**F**
		SB	D	**F**
I-880	Montague to Great Mall	NB	C	**F**
		SB	C	D
I-880	Great Mall to SR 237	NB	C	**F**
		SB	C	B
I-880	SR 237 to Dixon Landing	NB	C	D
		SB	C	B

[a] LOS based on density presented in VTA 2002 CMP Monitoring Data.

Source: Santa Clara Valley Transportation Authority, 2004.

intersections of Abbott Avenue, Serra Way, and Abel Street because of the lane reduction on the overpass. Vehicles had to wait through several cycles, and actual operations and delays are worse than the calculated results.

h. Baseline Traffic Conditions. This section discusses the operations of the key intersections under baseline conditions. Baseline conditions form the basis against which impacts of the proposed project are identified. For intersection analysis, this scenario includes existing traffic volumes plus traffic from approved but not yet constructed developments and approved and funded changes to the study roadway system. This section describes the procedure used to estimate the background traffic volume, the roadway improvements anticipated to be in place, and the results of the level of service analysis. Traffic volumes under far-term future conditions are analyzed under cumulative conditions. Because MD trip rates for certain uses is not available, Baseline Conditions were evaluated for the AM and PM peak hours only.

(1) Baseline Traffic Estimates. Traffic volumes under Baseline Conditions were estimated by adding existing volumes and traffic estimates from approved but not yet constructed projects in the study area. Trip assignments for approved projects in the area were obtained from the Midtown Milpitas Specific Plan EIR, which includes the Peery R&D, Irvine Company, Cisco Systems, and Great Mall Entertainment projects. In addition, approved projects under Baseline Conditions include Hillview Center, Apton Apartments, Milpitas Town Center, and Lockheed Residential. The approved trip inventories were attached in Appendix B.

The trip assignments at the study intersections were added to existing volumes to represent Baseline Conditions. Baseline volumes are presented on Figure IV.C-7A and IV.C-7B, which are located in Appendix B.

(2) Baseline Roadway Improvements. Carlo Street at Abel Street will be closed to reduce the number of conflicting turning movements at this intersection. Eastbound Carlo Street currently provides access via a one-way segment from Abel Street to Main Street. The technical analysis of the proposed closure was originally documented in the Midtown Specific Plan EIR. Therefore, the closure of Carlo Street (West of Main Street) was assumed under the Baseline and Baseline plus Project Conditions.

(3) Baseline Intersection Levels of Service. Levels of service were calculated for the study intersections using the background traffic volumes during the AM and PM Peak hours. Table IV.C-7 presents the LOS calculation results for the study intersections under Existing and Background Conditions. The intersections of Abel Street/Calaveras Boulevard and Milpitas Boulevard/Calaveras Boulevard are expected to operate at LOS E during both the AM and PM peak hours. The LOS calculation worksheets are contained in Appendix B.

The addition of traffic from approved projects causes the following study intersection to degrade from acceptable to unacceptable levels, or exacerbates unacceptable operations during either the AM and/or PM peak hour.

1. South Main Street/Carlo Street/Calaveras Boulevard (SR 237) On-Ramp (PM Peak Hours)

Table IV.C-7: Baseline Intersection Levels of Service

Intersection	Peak Hour	Delay[a]	LOS[b]
Abel Street / Marylinn Drive	AM	18.3	B-
	PM	52.4	D-
Abel Street / Weller Lane	AM	11.4	B+
	PM	12.3	B
Main Street / Weller Lane	AM	22.5	C+
	PM	26.1	C
Abel Street / Calaveras Boulevard (SR 237)*	AM	58.8	E+
	PM	57.0	E+
Main Street / Calaveras Boulevard (SR 237) Off-Ramp (U)	AM	11.6	B
	PM	12.5	B
South Main Street / Carlo Street / Calaveras Boulevard (SR 237) On-Ramp (U)	AM	10.4	B
	PM	38.5	**E**
Abel Street / Serra Way	AM	26.8	C
	PM	27.1	C
Main Street / Serra Way	AM	11.6	B+
	PM	17.3	B
Milpitas Boulevard / Jacklin Road (Abel Street)	AM	48.7	D
	PM	48.1	D
Milpitas Boulevard / Calaveras Boulevard (SR 237)*	AM	56.2	E+
	PM	66.8	E
Abel Street / Redwood Avenue	AM	15.3	B
	PM	7.5	A
Calaveras Boulevard / Serra Way	AM	18.1	B-
	PM	23.8	C
Calaveras Boulevard / Abbott Avenue	AM	37.1	D+
	PM	33.0	C-
Calaveras Boulevard / Town Center Drive	AM	8.1	A
	PM	11.8	B+
Calaveras Boulevard / Hillview Drive	AM	29.1	C
	PM	43.8	D
Milpitas Boulevard / Town Center Drive	AM	23.8	C
	PM	28.0	C
Milpitas Boulevard / Escuela Parkway	AM	20.3	C+
	PM	15.8	B

[a] Whole intersection weighted average control delay expressed in seconds per vehicle.
[b] LOS calculations performed using the *2000 Highway Capacity Manual* methodology with adjusted saturation flow rates.
* Designated CMP intersection.

Source: Fehr and Peers Associates, Inc., 2004.

(4) Signal Warrant Analysis. A peak hour signal warrant analysis, as described in Chapter 9 of the Caltrans *Traffic Manual,* was conducted under Baseline Conditions for the Main Street/Carlo Street and Main Street/SR 237 WB off-ramp intersections. The results of the peak hour signal warrant analysis indicate that the intersection of Main Street/SR 237 WB off-ramp satisfies the peak-hour warrant for traffic signal installation during the PM peak hour. The volumes and figures used to conduct this analysis are presented in Appendix B.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to transportation, circulation and parking that could result from implementation of the NMSD Project. The subsections begin with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential transportation, circulation and parking impacts associated with the proposed project. Mitigation measures are provided as appropriate.

a. Significance Criteria. Implementation of the NMSD Project would result in significant traffic impacts if development of any of the individual projects would exceed any of the thresholds described below.

Signalized Intersections. Significant traffic impacts at signalized intersections would occur if the project would cause:

- Intersection operations to change from an acceptable level (LOS D or better for City intersections and LOS E or better for CMP intersections) under baseline conditions to an unacceptable level; or
- Exacerbation of unacceptable operations (LOS E for City intersections or LOS F for CMP intersections) by increasing the critical delay by more than four seconds and increasing the volume-to-capacity (V/C) ratio by 0.01 or more; or
- An increase in the V/C ratio of 0.01 when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

Unsignalized Intersections. Significant impacts at an unsignalized intersection would occur if:

- The addition of project traffic causes an intersection to deteriorate from LOS D or better under baseline conditions to LOS E or F under project conditions, and the peak hour volume signal warrant criteria are met or exceeded; or
- Project traffic is added to an intersection that already meets or exceeds peak hour warrant criteria under baseline conditions, and operates unacceptably.

Freeway Segments. According to VTA guidelines and City of Milpitas standards, significant impacts to freeway segments would occur if:

- The addition of project traffic causes a segment to drop below its level of service standard (LOS E); or
- The amount of project traffic added to a segment already operating at LOS F is more than one percent of its capacity.

Roadway Segments. Significant impacts to a roadway segment would occur if:

- The addition of traffic from the proposed project degrades operations under General Plan Buildout plus Midtown Milpitas Specific Plan Conditions from an acceptable level (LOS D or better) to an unacceptable level (LOS E or LOS F); or
- The proposed project adds trips that are more than one percent of the segment's capacity when the segment is operating at LOS E or F under General Plan Buildout plus Midtown Milpitas Specific Plan Conditions.

Pedestrian, Bicycle, and Transit Facilities and Services. The project would cause a significant impact to pedestrian, bicycle, and transit facilities and services if:

- An element of the proposed project conflicts with existing or planned pedestrian, bicycle, and transit services; or
- The proposed project will create a hazardous condition for pedestrians or bicyclists that does not currently exist.

Parking. The project would result in a significant parking impact if implementation of the project causes or exacerbates a parking deficiency that would result in excessive demand for on-street spaces or parking in adjacent (i.e., non-project) areas.

Other. In addition, a significant transportation and circulation impact would occur if the project would:

- Exceed, either individually or cumulatively, a level of service standard established by the County Congestion Management Agency for designated roads or highways.
- Substantially increase hazards due to a design feature or incompatible land uses.
- Result in inadequate emergency access.
- Conflict with adopted policies supporting public transportation.

b. Environmental Evaluation. Impacts resulting from the implementation of the proposed project were evaluated under the following scenarios: 1) Baseline Conditions (Background Conditions); 2) Baseline Plus Project Conditions; 3) Cumulative (2015) Conditions; and 4) Cumulative (2015) Plus Project Conditions. The amount of traffic associated with the project for these scenarios was estimated using trip rates and manually assigned to the roadway network.

The analysis of Cumulative Conditions in 2015 was conducted based on projected roadway link volumes and is consistent with the City's approach to long-range transportation planning. Traffic volumes for 2015 Conditions from the Midtown Milpitas Specific Plan EIR were updated based on the addition of net new project generated trips. Each study scenario is described below.

(1) Baseline Plus Project Conditions. The impacts of the proposed development on the surrounding transportation system are discussed in this section. First, the methodology used to estimate the amount of traffic generated by the proposed projected is described. Then, results of the level of service calculations for Project Conditions are presented. For the AM and PM peak hours, Project Conditions are defined as Baseline Conditions plus traffic generated by the proposed project

and were used to identify project impacts. For the MD peak hour, Project Conditions are defined as Existing Conditions plus traffic generated by the proposed project.

The amount of traffic associated with a project is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the amount of traffic entering and exiting the sites within the Midtown area is estimated on a daily and peak-hour basis. In the second step, the directions vehicles use to approach and depart the site are estimated. The trips are assigned to specific street segments and intersection turning movements in the third step. The results of the process for this analysis are described below.

Trip Generation. The amount of traffic generated by the proposed library facilities was estimated by applying the trip rates published in the *Trip Generation* (Institute of Transportation Engineers (ITE), Seventh Edition, 2003). The trip rates applied to the senior housing development were based on the *Senior Housing Trip Generation and Parking Demand Characteristics* (ITE 66th Annual Meeting). In addition, the trip generation rates used for the proposed health care facilities were based on those recommended by the San Diego Association of Governments (SANDAG). These rates were used since they are generally higher than the ITE rates, and provide a more conservative analysis of traffic conditions. The project trip generation estimates are presented in Table IV.C-8.

Trip rates for the retail uses were reduced by 25 percent to account for pass-by trips, where pass-by trips represent trips made to a site by vehicles already on the adjacent street.

To develop the MD peak hour trip generation rates for the library facilities, library circulation records by hour were reviewed to estimate the number of MD vehicle trips.[2] Data from July 2003 showed that the circulation during the MD peak period was approximately equal to the PM peak hour. Accordingly, the MD trip generation rates were also to be the same as the PM trip generation rates.

The MD trip generation rates for the senior housing were developed based on the *Senior Housing Trip Generation and Parking Demand Characteristics* (ITE 66th Annual Meeting). The MD rates were derived from the hourly distribution of traffic throughout an average day. The peak-hour volumes of the facility, presented in the above reference, occurred during the MD (2:00 to 4:00 p.m.). In addition, the MD directional splits were assumed to be the same as the PM directional splits. The associated retail uses were assumed to have the same characteristics as the library facilities. Thus, the PM trip generation rates and directional splits for the retail facilities were used for the MD hour.

Information from County Health Care staff was used to estimate the MD trip generation rates for the Health Care facilities. The number of users was expected to be uniform throughout the day; therefore, to be conservative, the MD rates were assumed to be the same as the PM rates. The directional split for the MD was assumed to be 50 percent inbound and 50 percent outbound.

Based on the trip generation rates show in Table IV.C-8, it is estimated that the proposed NMSD project would generate 7,718 net new daily trips, 299 net new AM peak hour trips (226 inbound and 73 outbound), 881 net new MD peak hour trips (366 inbound and 515 outbound), and 876 net new PM hour trips (360 inbound and 516 outbound).

[2] *Milpitas Library Relocation Transportation Impact Analysis*, City of Milpitas, December 2003.

Trip Distribution. The trip distribution patterns for the proposed uses were estimated based on exiting travel patterns in the vicinity of the site and the relative locations of complementary land uses in the area. The major directions of approach and departure for the project site are shown on Figure IV.C-8 in Appendix B.

The proposed uses are generally expected to serve residents within the City of Milpitas although some traffic from employees, staff, deliveries and a portion of the library and health care patrons will use regional facilities. In any event, minimal traffic is expected on I-880 and I-680. Overall, a total of 37 percent of the library and retail trips, five percent of the senior housing trips, and 25 percent of the health care facility trips are expected to be localized in the areas along Abel Street, Milpitas Boulevard, and Jacklin Road. Ten percent of the senior housing vehicle trips are expected to be made to and from retail center located along Town Center Drive and Beresford Court east of the project site.

Trip Assignment. Trips generated by the proposed NMSD Project were assigned to the roadway system based on the directions of approach and departure described in the above section. The trip assignments for both peak hours are shown on Figure IV.C-9A and IV.C-9B in Appendix B. Project trips were added to the respective baseline traffic volumes to estimate volumes under Project Conditions. Volumes under Project Conditions are presented on Figure IV.C-10A and IV.C-10B in Appendix B.

(2) Baseline Plus Project Traffic Operations.

Intersection Operations. The traffic volumes under Baseline Plus Project Conditions were used with the baseline roadway network to calculate levels of service for all of the study intersections. The results of this analysis are summarized in Table IV.C-9 and show that three intersections would be significantly impacted in the PM peak hour.

- Abel Street/Marylinn Drive (PM Peak Hour)
- Main Street/Calaveras Boulevard Off-Ramp (PM Peak Hour)
- South Main Street/Carlo Street/Calaveras Boulevard (SR 237) On-Ramp (PM Peak Hour)

Each of these impacts is summarized below, along with an analysis of the feasibility of transportation improvements. Feasible mitigation measures and the resulting project conditions at these impacted intersections are summarized in Table IV.C-10. Because the area is highly urbanized, there are some cases where mitigation has been determined to be infeasible because of physical constraints, lane geometry limitations, or limitations of the jurisdictional authority of the City of Milpitas. Where applicable, the rationale for not implementing the modifications necessary to achieve less-than-significant impacts is provided in the summary text following the numbered impact and mitigation measure below.

The following sections provide more detail on the proposed roadway improvements.

Impact TRANS-1: Implementation of the proposed NMSD Project would result in a significant traffic impact at the intersection of Abel Street/Marylinn Drive in the PM peak hour. (S)

Table IV.C-8: Trip Generation

Land Use	Size (ksf or unit)	Daily	Rates (Per 1,000 Sq.Ft. or Number of Units)									Daily	Trips								
			AM			MD			PM				AM			MD			PM		
			In	Out	Total	In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	In	Out	Total
Library[a]	60	54.00	0.76	0.30	1.06	3.40	3.69	7.09	3.40	3.69	7.09	3,240	46	18	64	204	221	425	204	221	425
Senior Housing Project[b]	110	4.00	0.14	0.08	0.22	0.15	0.15	0.30	0.10	0.15	0.25	440	15	9	24	17	16	33	11	17	28
County Medical Facility[c]	60	50.00	2.40	0.60	3.00	1.65	3.85	5.50	1.65	3.85	5.50	3,000	144	36	180	99	231	330	99	231	330
Specialty Retail[c]	34.6	40.00	0.72	0.48	1.20	1.80	1.80	3.60	1.80	1.80	3.60	1,384	26	15	41	62	63	125	62	63	125
Pass-By Reduction (25%)												-346	-5	-5	-10	-16	-16	-32	-16	-16	-32
Specialty Retail Total												**1,038**	**21**	**10**	**31**	**46**	**47**	**93**	**46**	**47**	**93**
Total Net Trips												**7,718**	**226**	**73**	**299**	**366**	**515**	**881**	**360**	**516**	**876**

[a] *Trip Generation*, ITE, Seventh Edition, 2003.
[b] *Senior Housing Trip Generation and Parking Demand Characteristics.* ITE 66th Annual Meeting.
[c] *San Diego Traffic Generators,* 1988.

Source: Fehr and Peers Associates, 2004.

Table IV.C-9: Baseline Plus Project Intersection Levels of Service

Intersection	Peak Hour	Baseline		Baseline Plus Project				Sig. Impact?
		Delay[a]	LOS[b]	Delay[a]	LOS[b]	Δ in Delay[c]	Δ in Critical V/C[d]	
Abel Street / Marylinn Drive	AM	18.3	B-	19.4	B-	0.1	0.018	N
	MD	n/a	n/a	19.2	B-	n/a	n/a	n/a
	PM	52.4	D-	61.6	**E**	**13.9**	**0.092**	**Y**
Abel Street / Weller Lane	AM	11.4	B+	25.0	C	0.7	0.005	N
	MD	n/a	n/a	15.0	B	n/a	n/a	n/a
	PM	11.8	B+	23.1	C	15.6	0.174	N
Main Street / Weller Lane	AM	22.5	C+	23.5	C	-2.2	0.038	N
	MD	n/a	n/a	23.8	C	n/a	n/a	n/a
	PM	26.1	C	32.3	C-	8.6	0.147	N
Abel Street / Calaveras Boulevard (SR 237)*	AM	58.8	E+	60.0	E	1.7	0.004	N
	MD	n/a	n/a	40.3	D	n/a	n/a	n/a
	PM	57.0	E+	59.8	E+	5.6	0.019	N
Main Street / Calaveras Boulevard (SR 237) Off-Ramp (U)	AM	11.6	B	14.9	B	n/a	n/a	N
	MD	n/a	n/a	24.5	C	n/a	n/a	n/a
	PM	12.5	B	235.0	**F**	n/a	n/a	**Y**
South Main Street / Carlo Street / Calaveras Boulevard (SR 237) On-Ramp (U)	AM	10.4	B	10.8	B	n/a	n/a	N
	MD	n/a	n/a	13.1	B	n/a	n/a	n/a
	PM	38.5	**E**	75.1	**F**	n/a	n/a	**Y**
Abel Street / Serra Way	AM	26.8	C	27.0	C	-0.0	-0.001	N
	MD	n/a	n/a	20.8	C+	n/a	n/a	n/a
	PM	27.1	C	27.6	C	0.7	0.019	N
Main Street / Serra Way	AM	11.6	B+	13.3	B	-0.1	0.011	N
	MD	n/a	n/a	9.5	A	n/a	n/a	n/a
	PM	17.3	B	18.5	B-	2.3	0.046	N
Milpitas Boulevard / Jacklin Road (Abel Street)	AM	48.7	D	49.6	D	1.3	0.032	N
	MD	n/a	n/a	22.8	C+	n/a	n/a	n/a
	PM	48.1	D	50.0	D	1.3	0.022	N
Milpitas Boulevard / Calaveras Boulevard (SR 237)*	AM	56.2	E+	61.3	E	8.1	0.026	N
	MD	n/a	n/a	42.9	D	n/a	n/a	n/a
	PM	66.8	E	72.8	E	13.4	0.040	N
Abel Street / Redwood Avenue	AM	15.3	B	15.2	B	0.0	0.020	N
	MD	n/a	n/a	7.8	A	n/a	n/a	n/a
	PM	7.5	A	6.8	A	-0.5	0.050	N
Calaveras Boulevard / Serra Way	AM	18.1	B-	18.3	B-	-2.0	0.004	N
	MD	n/a	n/a	30.7	C	n/a	n/a	n/a
	PM	23.8	C	24.8	C	4.3	0.015	N
Calaveras Boulevard / Abbott Avenue	AM	37.1	D+	37.1	D+	0.2	0.003	N
	MD	n/a	n/a	32.1	C-	n/a	n/a	n/a
	PM	33.0	C-	33.3	C-	0.2	0.008	N
Calaveras Boulevard / Town Center Drive	AM	8.1	A	8.0	A	0.0	0.008	N
	MD	n/a	n/a	20.4	C+	n/a	n/a	n/a
	PM	11.8	B+	11.6	B+	0.0	0.016	N

Table IV.C-9 *continued*

Intersection	Peak Hour	Baseline		Baseline Plus Project				Sig. Impact?
		Delay[a]	LOS[b]	Delay[a]	LOS[b]	Δ in Delay[c]	Δ in Critical V/C[d]	
Calaveras Boulevard / Hillview Drive	AM	29.1	C	29.1	C	0.0	0.007	N
	MD	n/a	n/a	32.6	C-	n/a	n/a	n/a
	PM	43.8	D	44.2	D	0.9	0.016	N
Milpitas Boulevard / Town Center Drive	AM	23.8	C	23.7	C	-0.1	0.005	N
	MD	n/a	n/a	27.1	C	n/a	n/a	n/a
	PM	28.0	C	28.0	C	0.0	0.009	N
Milpitas Boulevard / Escuela Parkway	AM	20.3	C+	20.4	C+	0.2	0.011	N
	MD	n/a	n/a	19.4	B-	n/a	n/a	n/a
	PM	15.8	B	14.8	B	-0.5	0.051	N

[a] Whole intersection weighted average control delay expressed in seconds per vehicle.
[b] LOS calculations performed using the *2000 Highway Capacity Manual* methodology with adjusted saturation flow rates.
[c] Increase in average critical delay between Background and Project Conditions.
[d] Increase in critical volume-to-capacity ratio from Background to Project Conditions.
Unacceptable operations are shown in **bold** type.
* Designated CMP intersection.
Source: Fehr and Peers Associates, Inc., 2004.

Table IV.C-10: Mitigation Measures and LOS under Baseline Plus Project Conditions

Num.	Intersection	Required Mitigation	Peak Hour	Unmitigated		Mitigated		Impact Fully Mitigated?
				Delay	LOS	Delay	LOS	
1	Able St./Marylinn Dr.	Add a separate northbound right-turn lane and implement overlap phase for the westbound right-turn lane	PM	61.6	E	50.9	D	Yes
2	Main St./Calaveras Blvd. Off-Ramp	Investigate a traffic signal installation and addition of a separate southbound left-turn lane	PM	228.5	F	28.8	C	Yes
3	South Main St./Carlo Street/Calaveras Blvd. On-Ramp	Investigate a traffic signal installation	PM	75.1	F	25.1	C	Yes

Source: Fehr & Peers Assoc. Inc., 2004.

Development under the proposed NMSD Project would degrade the projected acceptable PM peak operating conditions at Able Street/Marylinn Drive. This intersection would operate at LOS D under baseline conditions and would degrade to LOS E with the proposed project.

Mitigation Measure TRANS-1: A separate northbound right-turn lane shall be installed and a overlap phase shall be implemented for a westbound right-turn lane prior to occupancy of the new library. The lane additions will require some right-of-way acquisition from a parking lot located on the southeast corner of the intersection. In addition, provision of westbound overlap phase would preclude southbound U-turns at this intersection.

This mitigation would provide LOS D or better. This mitigation measure would reduce the impact at this intersection to a less-than-significant level. (LTS)

Impact TRANS-2: Implementation of the proposed NMSD Project would result in a significant traffic impact at the intersection of Main Street/Calaveras Boulevard (SR 237) Off-Ramp in the PM peak hour. (S)

Development under the proposed NMSD Project would result in a worsening of the PM peak operating conditions at the unsignalized intersection of Main Street/Calaveras Boulevard Off-Ramp to a substandard condition. This intersection would operate at LOS B under baseline conditions, and would degrade to LOS F with the proposed intersection during the PM peak hour. In addition, a peak hour signal warrant analysis was conducted for the Main Street/Calaveras Boulevard Off-Ramp under Project Conditions (see Appendix B). The result of the analysis indicated that the intersection volumes are expected to satisfy the signal warrant during the PM peak hour.[3]

Mitigation Measure TRANS-2: Either of the following mitigation measures shall be implemented to mitigate this impact to a less-than-significant level.

(a) Installation of a traffic signal shall be investigated by City of Milpitas at the intersection and a separate southbound left-turn lane shall be installed on Main Street. If the City determines that a traffic signal is warranted, the developers shall pay a "fair share" cost towards the construction of the signal. The "fair share" cost will be determined by the City based on the magnitude of the project impacts

(b) An *alternative mitigation* that could alleviate this impact is elimination of the proposed Eastern Parking Garage driveway on Main Street. The intersection would operate under LOS C without the driveway. With this mitigation, the intersection of Main Street/Weller Lane would still operate under acceptable LOS. This mitigation would

[3] This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration Manual on Uniform Traffic Control Devices and Caltrans' Guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. City of Milpitas should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

exacerbate the need for a traffic signal at the South Main Street/Carlos Street/Calaveras Boulevard On-Ramp intersection (see Impact TRANS-3).

Implementation of either mitigation measure (a) or (b) would mitigate this impact to a less-than-significant level. (LTS)

Impact TRANS-3: Implementation of the proposed NMSD Project would result in a significant traffic impact at the intersection of South Main Street/Carlo Street/Calaveras Boulevard (SR 237) On-Ramp in the PM peak hour. (S)

Development under the proposed NMSD Project would exacerbate substandard PM peak operating conditions at South Main Street/Carlo Street/Calaveras Boulevard On-Ramp. Development anticipated under the proposed project would generate traffic that would degrade the intersection LOS from LOS E under Baseline Conditions to LOS F under Project Conditions during the PM peak period. In addition, a peak hour signal warrant analysis was conducted for the South Main Street/Carlo Street/ Calaveras Boulevard On-Ramp under Project Conditions (see Appendix B). The result of the analysis indicated that the intersection is expected to satisfy the warrant during the PM peak hour.[4]

Mitigation Measure TRANS-3: The City shall perform a complete signal warrant analysis at this location. If the City determines that a traffic signal is warranted, the developers shall pay a "fair share" cost towards the construction of the signal. The "fair share" cost is to be determined by the City based on the magnitude of the project impacts.

Implementation of a traffic signal would mitigate this impact to a less-than-significant level. (LTS)

Freeway Operations. Project-generated traffic volumes were added to existing traffic volumes for each freeway mainline segment. These volumes were then used to re-calculate density for each segment under Baseline Plus Project Conditions. The resultant freeway segment conditions are presented in Table IV.C-11. The addition of traffic from the proposed NMSD Project under Baseline Conditions would not significantly impact any freeway segments as shown in Table IV.C-11.

(3) Site Access, On-Site Circulation and Parking. Implementation of the NMSD Project would not result in any significant impacts related to site access, on-site circulation, or parking, as described below.

Site Access. Site access for the proposed projects was reviewed based on the site plan provided by the City of Milpitas. Three access points to the parking structure adjacent to the library are

[4] This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration Manual on Uniform Traffic Control Devices and Caltrans' Guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. City of Milpitas should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

Table IV.C-11: Project Conditions Freeway Segment Analysis

Freeway	Segment	Direction	Existing LOS[a]		1% of Capacity[b]	Project Trips		Project LOS[c]		Impact[d]
			AM	PM		AM	PM	AM	PM	
SR 237	McCarthy to Zanker	EB	C	F	46	18	17	C	F	No
		WB	**F**	**F**		9	31	**F**	**F**	No
I-680	Hostetter to Capitol	NB	D	C	92	25	21	D	C	No
		SB	C	**F**		7	42	C	**F**	No
I-680	Capitol to Montague	NB	D	D	92	25	21	D	D	No
		SB	C	**F**		7	42	C	**F**	No
I-680	Montague to Yosemite	NB	D	**F**	92	25	21	D	**F**	No
		SB	C	**F**		7	42	C	**F**	No
I-680	Yosemite to SR 237	NB	D	**F**	81	25	21	D	**F**	No
		SB	D	**E**		7	42	D	**E**	No
I-680	SR 237 to Jacklin	NB	D	**F**	69	0	0	D	**F**	No
		SB	D	D		0	0	D	D	No
I-880	Brokaw to Montague	NB	D	**F**	44	17	14	D	**F**	No
		SB	D	**F**		5	28	D	**F**	No
I-880	Montague to Great Mall	NB	C	**F**	69	17	14	C	**F**	No
		SB	C	D		5	28	C	D	No
I-880	Great Mall to SR 237	NB	C	**F**	69	17	14	C	**F**	No
		SB	C	B		5	28	C	C	No
I-880	SR 237 to Dixon Landing	NB	C	D	83	3	15	C	D	No
		SB	C	B		6	8	C	B	No

[a] LOS based on density presented in VTA 2002 CMP Monitoring Data.

[b] Based on segment capacities of 2,300 vehicles per hour per lane.

[c] LOS based on density calculation presented in the CMP TIA Guidelines with existing pus project traffic volumes.

[d] If project trips ≥ 1% capacity and existing operating level is LOS F, or project traffic degrades LOS E to LOS F, then there is a freeway impact.

Source: Fehr and Peers Associates, Inc., 2004.

proposed. A new library driveway on the eastern leg of the Main Street/Weller Lane intersection would provide access to the north side of the parking structure. Another access point would be located on the southwest corner of the structure, forming a new eastern leg of the Main Street/Calaveras Boulevard Off-Ramp intersection. A third access point would be on the southeast corner of the parking structure, where a new cul-de-sac on Winsor Avenue would be created. Access to the senior housing project would be provided via a driveway fronting Main Street, which leads to a parking lot behind the facility. Access to the County Medical Facility would be provided via a parking structure on Main Street south of the Calaveras Boulevard Off-Ramp. A driveway fronting Main Street would provide additional access to the facility. The number of driveways is sufficient to serve the expected traffic generated by the proposed projects. Thus, no site access impacts are anticipated.

On-Site Circulation. The current site plan does not include enough detail to review on-site circulation. The City will review the detailed site plans prior to approval to ensure adequate site distance and safe on-site circulation is provided.

Parking. The City's parking code provides required parking supplies for each proposed land use. The parking structure adjacent to the library would service parking for the library and retail space within the garage and is expected to include a total of 325 stalls. This proposed structure is expected to provide a surplus of number of stalls relative to the required supply of 323.

The parking facility located south of the Calaveras Boulevard Off-Ramp would service the medical facility and a retail/banquet facility and is expected to include 475 spaces. The medical facility and retail space would require a supply of 442 spaces.

On-site parking would be provided for the senior housing project, which is expected to include 79 spaces. The expected parking demand for this project is 0.72 spaces per unit. Using this standard, the senior housing would require a supply of 79 spaces. A summary of the parking evaluation is presented in Table IV.C-12.

The proposed parking supply is expected to meet the demand of the project uses; therefore, the project would not result in a significant parking impact.

Table IV.C-12: Proposed Parking

Land Use	Parking Supply/Demand
	Parking Supply
Eastern Parking Structure	325
Western Parking Structure	475
Total Parking Supply	**800**
	Required Parking
Library	260
Medical Office	275
Retail Space	125
Banquet Facility (daytime)	105
Total Required Parking	**765**

Source: City of Milpitas 2004
Sources for Demand Numbers: Library – Library Needs Assessment
Medical Office – County Health Retail & Banquet – City of Milpitas.

(4) Transit Services. As previously described, VTA operates bus and light rail transit (LRT) service in Santa Clara County. The project vicinity includes an important component of bus transportation in the City with the transit hub located at Main Street and Weller Lane at the northern end of the Midtown area, adjacent to the existing Senior Center location. This facility provides a transfer point between the Santa Clara County VTA system and the Alameda County (AC) Transit systems. Five bus routes provide service to the Weller and Main Transit Center located adjacent to the proposed library site.

Given the number and nature of the proposed projects in this vicinity, the proposed bus stops near the library are expected to meet the increased demand for transit services. The front entrance to all of the proposed developments is located within a 800-foot walking distance of the Transit Center stops. Additional locations and amenities should be developed.

(5) Bicycle and Pedestrian Facilities. As noted under the Existing Setting section, bike lanes are currently provided on Main Street in the project vicinity. The bike lane from Weller Lane to the Calaveras On-Ramp will be removed from both sides of Main Street as part of the streetscape improvements for the proposed project. This section would be converted to a bike route similar to the section of Marilynn Drive north of Weller Lane. No other changes to the bicycle system are proposed. Although the project does change an existing bicycle facility, bicycle travel through this relatively short segment is not expected to be significantly impacted. The streetscape improvements will help to minimize vehicle speeds through this area, better accommodating shared use of the travel lanes.

With the provision of planned bicycle parking facilities, patrons of the retail and library, as well as staff at the medical center will be encouraged to utilize non-automobile modes to access the project site. In addition, Main Street provides a direct connection to the Great Mall light rail station.

Pedestrian facilities comprise sidewalks and crosswalks. The project includes the installation of sidewalks along all project site frontage and sidewalk widths are anticipated to be in excess of 8 feet. Crosswalks are currently identified at all nearby signalized intersections, and will be provided at the Main Street/Calaveras Off-Ramp intersection regardless of signalization at this location.

Based on this evaluation, the project is not expected to result in any significant impacts to the bicycle or pedestrian systems.

(6) Cumulative (2015) Conditions. As stated at the beginning of this section and to be consistent with the Milpitas Midtown Specific Plan, the analysis of Cumulative Conditions was conducted based on projected roadway link volumes. 2015 Cumulative Conditions are defined as anticipated conditions with buildout of the Milpitas Midtown Specific Plan, plus additional growth in the City. The roadway link volumes for 2015 Cumulative Conditions are presented in Table IV.C-13A to IV.C-13D. The following roadway segments were analyzed:

<u>Interstate 880</u>

1. Mission Boulevard to Dixon Landing Road
2. Dixon Landing Road to Calaveras Boulevard
3. Calaveras Boulevard to Great Mall Parkway
4. Great Mall Parkway to Montague Expressway

<u>Interstate 680</u>

5. Scott Creek to Jacklin Road
6. Jacklin Road to Calaveras Boulevard
7. Calaveras Boulevard to Montague Expressway

<u>State Route 237</u>

8. Zanker Road to McCarthy Boulevard
9. McCarthy Boulevard to I-880

<u>Calaveras Boulevard</u>

10. McCarthy Boulevard to I-880
11. I-880 to Abbott Avenue
12. Abbott Avenue to Abel Avenue
13. Abel Avenue to Milpitas Boulevard
14. Milpitas Boulevard to Hillview Drive
15. Hillview Drive to I-680

<u>Montague Expressway</u>

16. Trimbel Road to McCarthy Boulevard
17. McCarthy Boulevard to I-880

Table IV.C-13A: Year 2015 Proposed General Plan vs. Midtown GPA Northbound/Eastbound AM Peak

Roadway Segment	From	To	Dir	1997 Vol	2015 General Plan Vol	2015 General Plan V/C	2015 General Plan LOS	2015 Gen. Plan + Midtown Vol	2015 Gen. Plan + Midtown V/C	2015 Gen. Plan + Midtown LOS	2015 With N Main Street Project Trips Added	2015 With N Main Street Project Vol	2015 With N Main Street Project V/C	2015 With N Main Street Project LOS	Capacity	% Change (w/ Midtown - w/o)	Significant Impact?
Interstate 880																	
1	Mission Blvd	Dixon Landing Rd	NB	3,600	4,116	0.59	A	4,255	0.61	B	3	4,258	0.61	B	7,000	0.0%	No
2	Dixon Landing Rd	Calaveras Blvd	NB	3,878	4,820	0.69	B	4,838	0.69	B	3	4,841	0.69	B	7,000	0.0%	No
3	Calaveras Blvd	Great Mall Pkwy	NB	2,926	3,097	0.52	A	3,244	0.54	A	17	3,261	0.54	A	6,000	0.3%	No
4	Great Mall Pkwy	Montague Expy	NB	3,031	4,537	0.76	C	4,578	0.76	C	17	4,595	0.77	C	6,000	0.3%	No
Interstate 680																	
5	Scott Creek	Jacklin Road	NB	4,721	4,721	0.79	C	4,721	0.79	C	1	4,722	0.79	C	6,000	0.0%	No
6	Jacklin Road	Calaveras Blvd	NB	5,000	5,000	0.83	D	5,000	0.83	D	0	5,000	0.83	D	6,000	0.0%	No
7	Calaveras Blvd	Montague Expy	NB	5,680	5,680	0.71	C	5,680	0.71	C	25	5,705	0.71	C	8,000	0.3%	No
State Route 237																	
8	Zanker Road	McCarthy Blvd	EB	3,344	3,780	0.76	C	3,622	0.72	C	18	3,640	0.73	C	5,000	0.4%	No
9	McCarthy Blvd	I-880	EB	3,337	2,907	0.73	C	2,718	0.68	B	18	2,736	0.68	B	4,000	0.5%	No
Calaveras Blvd																	
10	McCarthy Blvd	I-880	EB	n/a	1,463	0.49	A	1,463	0.49	A	18	1,481	0.49	A	3,000	0.6%	No
11	I-880	Abbott Avenue	EB	1,579	1,579	0.53	A	1,579	0.53	A	43	1,622	0.54	A	3,000	1.4%	No
12	Abbott Avenue	Abel Avenue	EB	1,434	1,434	0.48	A	1,434	0.48	A	43	1,477	0.49	A	3,000	1.4%	No
13	Abel Avenue	Milpitas Blvd	EB	1,490	1,490	0.5	A	1,490	0.5	A	24	1,514	0.50	A	3,000	0.8%	No
14	Milpitas Blvd	Hillview Drive	EB	990	990	0.33	A	990	0.33	A	13	1,003	0.33	A	3,000	0.4%	No
15	Hillview Drive	I-680	EB	1,110	1,110	0.37	A	1,110	0.37	A	13	1,123	0.37	A	3,000	0.4%	No
Montague Expressway																	
16	Trimble Road	McCarthy Blvd	EB	2,007	2,203	0.67	B	2,207	0.67	B	0	2,207	0.67	B	3,300	0.0%	No
17	McCarthy Blvd	I-880	EB	2,007	2,508	0.57	A	2,480	0.66	B	0	2,480	0.56	A	4,400	0.0%	No
18	I-880	S. Main Street	EB	1,689	2,215	0.67	B	2,188	0.67	B	0	2,188	0.66	B	3,300	0.0%	No
19	S. Main Street	McCandless Dr	EB	1,623	1,886	0.57	A	1,846	0.56	A	0	1,846	0.56	A	3,300	0.0%	No
20	McCandless Dr	Great Mall Pkwy	EB	835	939	0.28	A	956	0.28	A	0	956	0.29	A	3,300	0.0%	No
21	Great Mall Pkwy	S. Milpitas Blvd	EB	1,005	1,009	0.31	A	1,073	0.33	A	0	1,073	0.33	A	3,300	0.0%	No
22	S. Milpitas Blvd	I-680	EB	1,215	1,215	0.37	A	1,220	0.37	A	0	1,220	0.37	A	3,300	0.0%	No
Abel St																	
23	N. Milpitas Blvd	Calaveras Blvd	NB	570	570	0.32	A	570	0.32	A	27	597	0.33	A	1,800	1.5%	No
24	Calaveras Blvd	Great Mall Pkwy	NB	485	543	0.3	A	631	0.35	A	19	650	0.36	A	1,800	1.1%	No
25	Great Mall Pkwy	S. Main Street	NB	380	756	0.42	A	840	0.47	A	19	859	0.48	A	1,800	1.1%	No
Great Mall Parkway																	
26	I-880	S. Main Street	EB	211	294	0.11	A	329	0.12	A	0	329	0.12	A	2,700	0.0%	No
27	S. Main Street	Montague Expy	EB	640	808	0.3	A	883	0.33	A	0	883	0.33	A	2,700	0.0%	No
Tasman Drive															,		
28	Zanker Road	McCarthy Blvd	EB	0	839	0.31	A	754	0.28	A	0	754	0.28	A	2,700	0.0%	No
29	McCarthy Blvd	I-880	EB	99	286	0.11	A	325	0.12	A	0	325	0.12	A	2,700	0.0%	No
Main St.																	
30	Montague Expy	Abel Street	NB	504	1029	0.57	A	1242	0.69	B	16	1,258	0.70	B	1,800	0.9%	No
31	Abel Street	Great Mall Pkwy	NB	148	608	0.34	A	770	0.43	A	16	786	0.44	A	1,800	0.9%	No
32	Great Mall Pkwy	Curtis Avenue	NB	251	550	0.31	A	588	0.33	A	16	604	0.34	A	1,800	0.9%	No
33	Curtis Avenue	Carlo	NB	622	850	0.94	E	898	0.99	E	16	914	1.02	F	900	1.8%	**Yes***
Serra Way																	
34	Calaveras Blvd	Abel Street	EB	240	270	0.15	A	265	0.15	A	22	287	0.16	A	1,800	1.2%	No
35	Abel Street	Main Street	EB	141	295	0.16	A	328	0.18	A	41	369	0.21	A	1,800	2.3%	No

*The Midtown Milpitas Specific Plan EIR also identifies a significant impact at this intersection.

Source: City of Milpitas Public Works Department (2015 volumes based on projections from Citywide travel demand model).

Table IV.C-13B: Year 2015 Proposed General Plan vs. Midtown GPA Southbound/Westbound: AM Peak

Roadway Segment	From	To	Dir	1997 Vol	2015 General Plan Vol	2015 General Plan V/C	2015 General Plan LOS	2015 Gen. Plan + Midtown Vol	2015 Gen. Plan + Midtown V/C	2015 Gen. Plan + Midtown LOS	2015 With N Main Street Project Trips Added	2015 With N Main Street Project Vol	2015 With N Main Street Project V/C	2015 With N Main Street Project LOS	Capacity	% Change (w/ Midtown - w/o)	Significant Impact?
Interstate 880																	
1	Mission Blvd	Dixon Landing Rd	SB	5,800	6,162	0.88	D	6,255	0.89	D	6	6,261	0.89	D	7,000	0.1%	No
2	Dixon Landing Rd	Calaveras Blvd	SB	5,643	6,815	0.97	E	6,602	0.97	E	6	6,608	0.94	E	7,000	0.1%	No
3	Calaveras Blvd	Great Mall Pkwy	SB	3,960	4,532	0.76	C	4,566	0.76	C	5	4,571	0.76	C	6,000	0.1%	No
4	Great Mall Pkwy	Montague Expy	SB	3,631	4,748	0.79	C	4,781	0.8	C	5	4,786	0.80	C	6,000	0.1%	No
Interstate 680																	
5	Scott Creek	Jacklin Road	SB	5,577	6,143	1.02	F	6,167	1.03	F	4	6,171	1.03	F	6,000	0.1%	No
6	Jacklin Road	Calaveras Blvd	SB	5,600	6,190	1.03	F	6,365	1.06	F	0	6,365	1.06	F	6,000	0.0%	No
7	Calaveras Blvd	Montague Expy	SB	5,729	6,525	0.82	D	6,394	0.8	C	7	6,401	0.80	D	8,000	0.1%	No
State Route 237																	
8	Zanker Road	McCarthy Blvd	WB	5,630	5,630	1.13	F	5,630	1.13	F	9	5,639	1.13	F	5,000	0.2%	No
9	McCarthy Blvd	I-880	WB	4,987	3,681	0.96	E	3,843	0.96	E	9	3,852	0.96	E	4,000	0.2%	No
Calaveras Blvd																	
10	McCarthy Blvd	I-880	WB	n/a	3,994	1.33	F	3,994	1.33	F	9	4,003	1.33	F	3,000	0.3%	No
11	I-880	Abbott Avenue	WB	3,979	4,255	1.42	F	4,311	1.44	F	13	4,324	1.44	F	3,000	0.4%	No
12	Abbott Avenue	Abel Avenue	WB	3,171	3,347	1.12	F	3,259	1.09	F	13	3,272	1.09	F	3,000	0.4%	No
13	Abel Avenue	Milpitas Blvd	WB	2,740	3,075	1.03	F	3,139	1.05	F	71	3,210	1.07	F	3,000	2.4%	**Yes***
14	Milpitas Blvd	Hillview Drive	WB	2,340	2,695	0.9	D	2,743	0.91	E	40	2,783	0.93	E	3,000	1.3%	**Yes***
15	Hillview Drive	I-680	WB	2,900	3,348	1.12	F	3,408	1.14	F	40	3,448	1.15	F	3,000	1.3%	**Yes***
Montague Expressway																	
16	Trimble Road	McCarthy Blvd	WB	4,041	4,985	1.51	F	4,975	1.51	F	0	4,975	1.51	F	3,300	0.0%	No
17	McCarthy Blvd	I-880	WB	4,411	4,781	1.09	F	4,735	1.08	F	0	4,735	1.08	F	4,400	0.0%	No
18	I-880	S. Main Street	WB	4,248	5,048	1.53	F	4,941	1.5	F	0	4,941	1.50	F	3,300	0.0%	No
19	S. Main Street	McCandless Dr	WB	3,059	3,319	1.01	F	3,229	0.98	E	0	3,229	0.98	E	3,300	0.0%	No
20	McCandless Dr	Great Mall Pkwy	WB	2,317	2,317	0.7	B	2,317	0.7	B	0	2,317	0.70	C	3,300	0.0%	No
21	Great Mall Pkwy	S. Milpitas Blvd	WB	2,997	3,185	0.97	E	3,136	0.95	E	0	3,136	0.95	E	3,300	0.0%	No
22	S. Milpitas Blvd	I-680	WB	3,412	3,513	1,06	F	3,517	1.07	F	0	3,517	1.07	F	3,300	0.0%	No
Abel St																	
23	N. Milpitas Blvd	Calaveras Blvd	SB	1,755	2,407	1.34	F	2,414	1.34	F	67	2,481	1.38	F	1,800	3.7%	**Yes**
24	Calaveras Blvd	Great Mall Pkwy	SB	760	1,603	0.89	D	1,732	0.96	E	6	1,738	0.97	E	1,800	0.3%	No
25	Great Mall Pkwy	S. Main Street	SB	920	924	0.51	A	1,186	0.66	B	6	1,192	0.66	B	1,800	0.3%	No
Great Mall Parkway																	
26	I-880	S. Main Street	WB	1,166	2,825	1.06	F	3,106	1.15	F	0	3,106	1.15	F	2,700	0.0%	No
27	S. Main Street	Montague Expy	WB	920	1,884	0.7	B	1,901	0.7	B	0	1,901	0.70	C	2,700	0.0%	No
Tasman Drive																	
28	Zanker Road	McCarthy Blvd	WB	0	3,446	1.28	F	3,554	1.32	F	0	3,554	1.32	F	2,700	0.0%	No
29	McCarthy Blvd	I-880	WB	1,667	5,896	2.18	F	6,252	2.32	F	0	6,252	2.32	F	2,700	0.0%	No
Main St.																	
30	Montague Expy	Abel Street	SB	634	897	0.5	A	1159	0.64	B	6	1,165	0.65	B	1,800	0.3%	No
31	Abel Street	Great Mall Pkwy	SB	393	659	0.37	A	764	0.42	A	6	770	0.43	A	1,800	0.3%	No
32	Great Mall Pkwy	Curtis Avenue	SB	394	957	0.54	A	1203	0.67	B	6	1,209	0.67	B	1,800	0.3%	No
33	Curtis Avenue	Carlo	SB	622	909	1.01	F	1157	1.29	F	6	1,163	1.29	F	900	0.7%	No
Serra Way																	
34	Calaveras Blvd	Abel Street	WB	281	412	0.29	A	562	0.31	A	7	569	0.32	A	1,800	0.4%	No
35	Abel Street	Main Street	WB	154	446	0.25	A	525	0.29	A	13	538	0.30	A	1,800	0.7%	No

*The Midtown Milpitas Specific Plan EIR also identifies a significant impact at this intersection.

Source: City of Milpitas Public Works Department (2015 volumes based on projections from Citywide travel demand model).

Table IV.C-13C: Year 2015 Proposed Midtown GPA & Proposed Project Northbound/Eastbound: PM Peak

Roadway Segment	From	To	Dir	1997 Vol	2015 General Plan Vol	2015 General Plan V/C	2015 General Plan LOS	2015 Gen. Plan + Midtown Vol	2015 Gen. Plan + Midtown V/C	2015 Gen. Plan + Midtown LOS	2015 With N Main Street Project Trips Added	2015 With N Main Street Project Vol	2015 With N Main Street Project V/C	2015 With N Main Street Project LOS	Capacity	% Change (w/ Project - Midtown)	Significant Impact?
Interstate 880																	
1	Mission Blvd	Dixon Landing Rd	NB	5,000	5,750	0.82	D	5,729	0.82	D	15	5,744	0.82	D	7,000	0.2%	No
2	Dixon Landing Rd	Calaveras Blvd	NB	5,273	6,087	0.87	D	6,163	0.88	D	15	6,178	0.88	D	7,000	0.2%	No
3	Calaveras Blvd	Great Mall Pkwy	NB	5,655	6,186	1.03	F	6,186	1.03	F	14	6,200	1.03	F	6,000	0.2%	No
4	Great Mall Pkwy	Montague Expy	NB	5.555	6,077	1.01	F	6,077	1.01	F	14	6,091	1.02	F	6,000	0.2%	No
Interstate 680																	
5	Scott Creek	Jacklin Road	NB	5,867	6,418	1.07	F	6,418	1.07	F	8	6,426	1.07	F	6,000	0.1%	No
6	Jacklin Road	Calaveras Blvd	NB	5,700	6,235	1.04	F	6,235	1.04	F	0	6,235	1.04	F	6,000	0.0%	No
7	Calaveras Blvd	Montague Expy	NB	5,655	6,186	0.77	C	6,186	0.77	C	21	6,207	0.78	C	8,000	0.3%	No
State Route 237																	
8	Zanker Road	McCarthy Blvd	EB	4,938	6,481	1.30	F	6,633	1.33	F	17	6,650	1.33	F	5,000	0.3%	No
9	McCarthy Blvd	I-880	EB	5,444	4,445	1.11	F	4,607	1.15	F	17	4,624	1.16	F	4,000	0.4%	No
Calaveras Blvd																	
10	McCarthy Blvd	I-880	EB	n/a	3,663	1.22	F	3,663	1.22	F	17	3,680	1.23	F	3,000	0.6%	No
11	I-880	Abbott Avenue	EB	3,781	4,565	1.52	F	4,877	1.63	F	39	4,916	1.64	F	3,000	1.3%	**Yes***
12	Abbott Avenue	Abel Avenue	EB	3,276	3,797	1.27	F	4,019	1.34	F	39	4,058	1.35	F	3,000	1.3%	**Yes***
13	Abel Avenue	Milpitas Blvd	EB	3,160	3,566	1.19	F	3,482	1.16	F	161	3,643	1.21	F	3,000	5.4%	**Yes**
14	Milpitas Blvd	Hillview Drive	EB	2,590	2,848	0.95	E	2,869	0.96	E	83	2,952	0.98	E	3,000	2.8%	**Yes**
15	Hillview Drive	I-680	EB	3,050	3,316	1.11	F	3,357	1.12	F	83	3,440	1.15	F	3,000	2.8%	**Yes***
Montague Expressway																	
16	Trimble Road	McCarthy Blvd	EB	3,899	3,899	1.18	F	3,899	1.18	F	0	3,899	1.18	F	3,300	0.0%	No
17	McCarthy Blvd	I-880	EB	4,777	5,275	1.20	F	5,401	1.23	F	0	5,401	1.23	F	4,400	0.0%	No
18	I-880	S. Main Street	EB	4,402	5,563	1.69	F	5,745	1.74	F	0	5,745	1.74	F	3,300	0.0%	No
19	S. Main Street	McCandless Dr	EB	3,508	4,106	1.24	F	4,239	1.28	F	0	4,239	1.28	F	3,300	0.0%	No
20	McCandless Dr	Great Mall Pkwy	EB	2,216	2,216	0.67	B	2,216	0.67	B	0	2,216	0.67	B	3,300	0.0%	No
21	Great Mall Pkwy	S. Milpitas Blvd	EB	2,040	2,120	0.64	B	2,082	0.63	B	0	2,082	0.63	B	3,300	0.0%	No
22	S. Milpitas Blvd	I-680	EB	2,162	2,162	0.66	B	2,162	0.66	B	0	2,162	0.66	B	3,300	0.0%	No
Abel St																	
23	N. Milpitas Blvd	Calaveras Blvd	NB	1,820	2,694	1.50	F	2,742	1.52	F	174	2,916	1.62	F	1,800	9.7%	**Yes***
24	Calaveras Blvd	Great Mall Pkwy	NB	895	1,781	0.99	E	1,544	0.86	D	26	1,570	0.87	D	1,800	1.4%	No
24	Great Mall Pkwy	S. Main Street	NB	1,070	1,283	0.71	C	1,310	0.73	C	26	1,336	0.74	C	1,800	1.4%	No
Great Mall Parkway																	
26	I-880	S. Main Street	EB	1,003	2,295	0.85	D	2,312	0.86	D	0	2,312	0.86	D	2,700	0.0%	No
27	S. Main Street	Montague Expy	EB	1,273	2,079	0.77	C	2,133	0.79	C	0	2,133	0.79	C	2,700	0.0%	No
Tasman Drive																	
28	Zanker Road	McCarthy Blvd	EB	0	3,543	1.31	F	3,607	1.34	F	0	3,607	1.34	F	2,700	0.0%	No
29	McCarthy Blvd	I-880	EB	1,065	3,204	1.19	F	2,973	1.10	F	0	2,973	1.10	F	2,700	0.0%	No
Main St.																	
30	Montague Expy	Abel Street	NB	1077	1565	0.87	D	1874	1.04	F	33	1,907	1.06	F	1,800	1.8%	**Yes**
31	Abel Street	Great Mall Pkwy	NB	386	965	0.54	A	1082	0.60	B	33	1,115	0.62	B	1,800	1.8%	No
32	Great Mall Pkwy	Curtis Avenue	NB	629	728	0.40	A	991	0.55	A	33	1,024	0.57	A	1,800	1.8%	No
33	Curtis Avenue	Carlo	NB	722	1097	1.22	F	1385	1.54	F	33	1,418	1.58	F	900	3.7%	**Yes**
Serra Way																	
34	Calaveras Blvd	Abel Street	EB	439	674	0.37	A	776	0.43	A	20	796	0.44	A	1,800	1.1%	No
35	Abel Street	Main Street	EB	333	453	0.25	A	549	0.31	A	48	597	0.33	A	1,800	2.7%	No

*The Midtown Milpitas Specific Plan EIR also identifies a significant impact at this intersection.

Source: City of Milpitas Public Works Department (2015 volumes based on projections from Citywide travel demand model).

Table IV.C-13D: Year 2015 Proposed Midtown GPA & Proposed Project Southbound/Westbound: PM Peak

Roadway Segment	From	To	Dir	1997 Vol	2015 General Plan Vol	2015 General Plan V/C	2015 General Plan LOS	2015 Gen. Plan + Midtown Vol	2015 Gen. Plan + Midtown V/C	2015 Gen. Plan + Midtown LOS	2015 With N Main Street Project Trips Added	2015 With N Main Street Project Vol	2015 With N Main Street Project V/C	2015 With N Main Street Project LOS	Capacity	% Change (w/ Project - Midtown)	Significant Impact?
Interstate 880																	
1	Mission Blvd	Dixon Landing Rd	SB	5,000	5,470	0.78	C	5,470	0.78	C	8	5,478	0.78	C	7,000	0.1%	No
2	Dixon Landing Rd	Calaveras Blvd	SB	4,937	5,401	0.77	C	5,401	0.77	C	8	5,409	0.77	C	7,000	0.1%	No
3	Calaveras Blvd	Great Mall Pkwy	SB	2,974	3,253	0.54	A	3,253	0.54	A	28	3,281	0.55	A	6,000	0.5%	No
4	Great Mall Pkwy	Montague Expy	SB	2,958	4,242	0.71	C	4,125	0.69	B	28	4,153	0.69	B	6,000	0.5%	No
Interstate 680																	
5	Scott Creek	Jacklin Road	SB	5,055	5,530	0.92	E	5,350	0.89	D	5	5,355	0.89	D	6,000	0.1%	No
6	Jacklin Road	Calaveras Blvd	SB	5,400	5,907	0.98	E	5,907	0.98	E	0	5,907	0.98	E	6,000	0.0%	No
7	Calaveras Blvd	Montague Expy	SB	5,704	6,240	0.78	C	6,240	0.78	C	42	6,282	0.79	C	8,000	0.5%	No
State Route 237																	
8	Zanker Road	McCarthy Blvd	WB	3,479	3,806	0.76	C	3,806	0.76	C	31	3,837	0.77	C	5,000	0.6%	No
9	McCarthy Blvd	I-880	WB	4,086	1,888	0.47	A	1,990	0.50	A	31	2,021	0.51	A	4,000	0.8%	No
Calaveras Blvd																	
10	McCarthy Blvd	I-880	WB	n/a	1,468	0.49	A	1,468	0.49	A	31	1,499	0.50	A	3,000	1.0%	No
11	I-880	Abbott Avenue	WB	1,893	1,893	0.63	B	1,893	0.63	B	74	1,967	0.66	B	3,000	2.5%	No
12	Abbott Avenue	Abel Avenue	WB	1,704	1,704	0.57	A	1,704	0.57	A	74	1,778	0.59	A	3,000	2.5%	No
13	Abel Avenue	Milpitas Blvd	WB	1,940	1,940	0.65	B	1,940	0.65	B	113	2,053	0.68	B	3,000	3.8%	No
14	Milpitas Blvd	Hillview Drive	WB	1,460	1,460	0.49	A	1,460	0.49	A	54	1,514	0.50	A	3,000	1.8%	No
15	Hillview Drive	I-680	WB	1,910	1,910	0.64	B	1,910	0.64	B	53	1,963	0.65	B	3,000	1.8%	No
Montague Expressway																	
16	Trimble Road	McCarthy Blvd	WB	2,430	2,847	0.86	D	2,826	0.86	D	0	2,826	0.86	D	3,300	0.0%	No
17	McCarthy Blvd	I-880	WB	2,120	2,681	0.61	B	2,623	0.60	A	0	2,623	0.60	A	4,400	0.0%	No
18	I-880	S. Main Street	WB	2,298	2,376	0.72	C	2,384	0.72	C	0	2,384	0.72	C	3,300	0.0%	No
19	S. Main Street	McCandless Dr	WB	1,794	2,110	0.64	B	2,130	0.65	B	0	2,130	0.65	B	3,300	0.0%	No
20	McCandless Dr	Great Mall Pkwy	WB	1,148	1,319	0.40	A	1,323	0.40	A	0	1,323	0.40	A	3,300	0.0%	No
21	Great Mall Pkwy	S. Milpitas Blvd	WB	1,645	1,834	0.56	A	1,700	0.52	A	0	1,700	0.52	A	3,300	0.0%	No
22	S. Milpitas Blvd	I-680	WB	1,381	1,509	0.46	A	1,388	0.42	A	0	1,388	0.42	A	3,300	0.0%	No
Abel St																	
23	N. Milpitas Blvd	Calaveras Blvd	SB	660	680	0.38	A	690	0.38	A	134	824	0.46	A	1,800	7.4%	No
24	Calaveras Blvd	Great Mall Pkwy	SB	415	495	0.28	A	508	0.28	A	41	549	0.31	A	1,800	2.3%	No
24	Great Mall Pkwy	S. Main Street	SB	710	1,329	0.74	C	1,447	0.80	D	41	1,488	0.83	D	1,800	2.3%	No
Great Mall Parkway																	
26	I-880	S. Main Street	WB	354	461	0.17	A	493	0.18	A	0	493	0.18	A	2,700	0.0%	No
27	S. Main Street	Montague Expy	WB	1,067	1,439	0.53	A	1,565	0.58	A	0	1,565	0.58	A	2,700	0.0%	No
Tasman Drive																	
28	Zanker Road	McCarthy Blvd	WB	0	1,654	0.61	B	1,587	0.59	A	0	1,587	0.59	A	2,700	0.0%	No
29	McCarthy Blvd	I-880	WB	180	984	0.36	A	1,020	0.38	A	0	1,020	0.38	A	2,700	0.0%	No
Main St.																	
30	Montague Expy	Abel Street	SB	660	767	0.43	A	962	0.53	A	42	1,004	0.56	A	1,800	2.3%	No
31	Abel Street	Great Mall Pkwy	SB	206	479	0.27	A	634	0.35	A	42	676	0.38	A	1,800	2.3%	No
32	Great Mall Pkwy	Curtis Avenue	SB	337	613	0.34	A	663	0.37	A	42	705	0.39	A	1,800	2.3%	No
33	Curtis Avenue	Carlo	SB	346	608	0.68	B	678	0.75	C	42	720	0.80	C	900	4.7%	No
Serra Way																	
34	Calaveras Blvd	Abel Street	WB	389	625	0.35	A	655	0.36	A	37	692	0.38	A	1,800	2.1%	No
35	Abel Street	Main Street	WB	176	490	0.27	A	521	0.29	A	78	599	0.33	A	1,800	4.3%	No

Source: City of Milpitas Public Works Department (2015 volumes based on projections from Citywide travel demand model).

18. I-880 to South Main Street
19. South Main Street to McCandless Drive
20. McCandless Drive to Great Mall Parkway
21. Great Mall Parkway to South Milpitas Boulevard
22. South Milpitas Boulevard to I-680

Abel Street

23. North Milpitas Boulevard to Calaveras Boulevard
24. Calaveras Boulevard to Great Mall Parkway
25. Great Mall Parkway to South Main Street

Great Mall Parkway

26. I-880 to South Main Street
27. South Main Street to Montague Expressway

Tasman Drive

28. Zanker Road to McCarthy Boulevard
29. McCarthy Boulevard to I-880

Main Street

30. Montague Expressway to Abel Street
31. Abel Street to Great Mall Parkway
32. Great Mall Parkway to Curtis Avenue
33. Curtis Avenue to Carlo Street

Serra Way

34. Calaveras Boulevard to Abel Street
35. Abel Street to Main Street

(7) Cumulative (2015) Plus Project Conditions Traffic volume estimates were obtained from the Midtown Milpitas Specific Plan EIR for both AM and PM peak hours. Those volume estimates were developed using the City's travel demand model. A brief description of the City's model and the corresponding land use and future input assumptions is presented in the Midtown Milpitas Specific Plan EIR. Project traffic was added to those volumes (which included buildout of the City's General Plan plus traffic associated with development of the Midtown Milpitas Specific Plan). The trips for the NMSD were added to the General Plan Plus Midtown volumes to represent Cumulative Plus Project Conditions.

2015 Roadway Segment Levels of Service. The purpose of this analysis is to compare roadway segment operations based on the General Plan land uses and the land use changes proposed as part of the Midtown Specific Plan project to operations with the proposed NMSD Project. The roadway segments included in this analysis were selected by City of Milpitas staff. Table IV.C-13 presents the 2015 roadway segment analysis for northbound/eastbound and southbound/westbound segments for the AM and PM peak hours, respectively.

The addition of traffic from the proposed project under Cumulative Conditions would significantly exacerbate AM peak hour operations on five (5) of the 35 study roadway segments that are projected to operate at unacceptable levels under General Plan Build plus Midtown Milpitas Specific Plan Conditions. During the PM peak hour, the proposed project is expected to significantly exacerbate operations on eight (8) of the 35 study roadway segments. Table IV.C-13 details these impacts. The roadway segments that would be significantly affected by development of the proposed project are summarized below:

1. Calaveras Boulevard Westbound – Abel Avenue to Milpitas Boulevard (AM Peak Hour)*
2. Calaveras Boulevard Westbound – Milpitas Boulevard to Hillview Drive (AM Peak Hour)*
3. Calaveras Boulevard Westbound – Hillview Drive to I-680(AM Peak Hour)
4. Abel Street Southbound – North Milpitas Boulevard to Calaveras Boulevard (AM Peak Hour)
5. Main Street Northbound – Curtis Avenue to Carlo Street (AM Peak Hour)*
6. Calaveras Boulevard Eastbound – I-880 to Abbott Avenue (PM Peak Hour)*
7. Calaveras Boulevard Eastbound – Abbott Avenue to Abel Avenue (PM Peak Hour)*
8. Calaveras Boulevard Eastbound – Abel Avenue to Milpitas Avenue (PM Peak Hour)
9. Calaveras Boulevard Eastbound – Milpitas Ave to Hillview Drive (PM Peak Hour)
10. Calaveras Boulevard Eastbound – Hillview Drive to I -680 (PM Peak Hour)*
11. Abel Street Northbound – North Milpitas Boulevard to Calaveras Boulevard (PM Peak Hour)*
12. Main Street Northbound – Montague Expressway to Abel Street (PM Peak Hour)
13. Main Street Northbound – Curtis Avenue to Carlo Street (PM Peak Hour)

* The Midtown Milpitas Specific Plan EIR also identifies a significant impact at this intersection.

Impact TRANS-4: The addition of traffic from the NMSD Project under Cumulative Conditions would significantly exacerbate AM peak hour operations on five roadway segments that are projected to operate at unacceptable levels without the project. During the PM peak hour, the NMSD Project is expected to significantly exacerbate operation on eight of the 35 study roadway segments. These changes are considered a significant impact. (S)

Mitigation Measure TRANS-4: The City of Milpitas has planned to upgrade traffic signal interconnect and coordination along Calaveras Boulevard. Although this improvement would not reduce the project impacts to a less-than-significant level, it would reduce some congestion and improve traffic flow along Calaveras Boulevard.

In addition to the planned signal improvements, the development of both the County Health Center and the provision of retail uses near the senior housing and the library would provide areawide transportation benefits. For example, patrons of the Santa Clara County Health Centers who reside in the City of Milpitas would reduce the length of their trips because they currently must travel to the next closest Health Center, which is currently located in the City of San Jose. These internalized trips to Milpitas would reduce travel over a broader geographic area and would help to reduce regional congestion on both Milpitas and San Jose roadways. In

addition, the proposed retail uses would provide another option for new and existing residents in the area to obtain services without having to travel to other parts of the City, especially by car. It is noted that even with these benefits, the cumulative project impacts would remain at a significant level.

No mitigation measures beyond those identified in Mitigation Measures TRANS-1 through TRANS-3 are considered feasible for any of the cumulatively impacted roadway segments; however, historically the City has required development to pay its pro-rata share of improvement cost toward improvement on a project by project basis. All of those segments projected to operate at unacceptable levels under General Plan Buildout plus Midtown Milpitas Specific Plan Conditions would do so because no feasible mitigation measure can be implemented to increase vehicle capacity. All of those roadways are already built out and cannot be widened within the existing right-of-way. The secondary impacts of widening these roadways, which include right-of-way acquisition and demolition of existing buildings, are expected to result in a greater negative impact on the environment than accommodating the additional congestion. This impact is considered significant and unavoidable. (SU)